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Abstract

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The rationale of Greater Occipital Nerve block in the treatment of chronic cranio-facial pain syndromes and its efficacy in the clinical practice

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Abstract

In the last decades greater occipital nerve (GON) block has become a topic of growing interest for the treatment of several primary and secondary headache disorders, particularly those most disabling such as chronic cluster headache and chronic migraine.

The rationale is provided by the convergence of the dorsolateral nuclei of the upper cervical spinal cord on the nucleus trigeminalis caudalis, also known as 'trigemino-cervical complex'. Indeed, cranial somatic sensory innervation is supplied by afferents of the trigeminal nerve and the first three cervical nerves, of which GON has the dominant functional role.

The present prospective study aims to investigate the analgesic effect of the ultrasound (US)- guided GON block at the level of C2 for the management of patients with chronic headache disorders treated at Pain Care Unit of the Policlinico Hospital in Bari.

Patients with a diagnosis of chronic migraine (CM), chronic cluster headache (CCH), occipital neuralgia (ON) and cervicogenic headache (CH) not relieved by pharmacological therapy were recruited. Exclusion criteria were atypical headaches, trigeminal neuralgia, acquired or congenital coagulopathy and Chiari I malformation.

Ultrasonography was chosen because it is a cheap technique which allows a clear visualization of both the greater occipital nerve, as a hyperechoic structure between the semispinalis capitis and obliquus inferior capitis muscle, and the solution spreading during the infiltration. A low-volume nerve block consisting of 0.5 mL of 0.25% levobupivacaine and 0.5 mL of methylprednisolone depot was used.

Mean weekly VAS scores were assessed pre-injection and at the follow-up visits. Clinical success was defined as pain reduction >50% and/or reduction of pain attack more >50%, and/or reduction of analgesics.

Our results showed statistical significance for VAS-score reduction in CM ($p=0,037$), CCH ($p=0,00058$), CH ($p=0,0046$) and ON ($p=0,031$) with a global response rate of 75%. Furthermore, patients suffering from chronic migraine (CM) and chronic cluster headache (CCH) experienced fewer number of headache crisis per month and reported a decrease in the consumption of symptomatic drugs, especially triptans.

After a single procedure the median duration of a favorable response was about 6 weeks (range 4- 16 weeks). No relevant adverse effects were noted during the study period.

From this study US-guided GON-block appears to be a well-tolerated, repeatable, minimally invasive and low-cost interventional technique that helps reduce pain severity and medication overuse in various chronic headache disorders.

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